Scientific Objectives	*Accomplishments*
(ii) Biological studies to continue and applicability of biofertiliser in hydroponic systems, making use of green house chamber.	Biological studies enroute to Antarctica, in the polyna and in the Antarctic lake continued. Green house established and hydroponic system also successfully tested. Cucumber, green chillies & tomatoes were grown.
(iii) Continuation of atmospheric and magnetospheric studies including modelling of atmospheric boundary layer. Mapping of atmospheric strata including Sound Detection and Ranging system (SODAR).	SODAR experiments successfully continued. Study of ozone layer also continued. The meteorological parameters for weather forecasting and hourly synoptic observations continued.
(iv) Establishment of three-axis microbarograph to record direction and speed of atmospheric disturbances in the lower planetary boundary layer.	Successfully established.
(v) Establishement of geomagnetic observatory at Dakshin Gangotri, Maitri and Wohlthat.	Successfully established.
(vi) Environmental physiology and psychological studies and the study of the behavioural changes to psychlogical circadain rhythm alternations in the extreme Antarctic conditions.	Various physiological and psychological data collected for laboratory analysis.

Implementation of zinconium titanium and magnet plant

3070 SHRI S. MADHAVAN: Will the PRIME MINISTER be pleased to state:

(a) what steps have been taken to implement the zirconium sponge plant at Palayakayal in Tamil Nadu; and

(b) what are the reasons for delay in completing the plant complex consisting of titanium sponge plant and magnesium plant?

THE MINISTER OF STATE IN THE MINISTRY OF SCIENCE AND TECHNOLOGY, DEPARTMENT OF ELECTRONICS AND DEPARTMENT OF OCEAN DEVELOPMENT AND MINISTER OF STATE IN THE MINISTRY OF PARLIAMENTARY AFFAIRS (SHRI P. R. KUMARAMANGALAM): (a) In respect of the Zirconium Sponge Plant, all preliminary site and project related work like acquisition of land, environment clearance, arrangement for power and water has been completed. The design of the industrial complex has also been taken up with the consultants.

(b) There is no delay in execution of these plants. Work is proceeding according to plan.

Food irradiation technology

3071. SHRI B. K. HARIPRASAD: Will the PRIME MINISTER be pleased to state:

(a) whether it is a fact that as per recent press reports (AEC) Atomic Energy Commission propose to promote food irradiation technology to cover many commonly sed food items both for home and exports and, if so, the details thereof

(b) whether Government are aware that Australia has benned food irradiation recently as also New Zealand and several other contries;

(c) whether Government are aware of the stiff consumer resistance in our export markets against food irradiation;

(d) whether Government are aware that because of the inherent dangers in nuclear energy many countries have placed an embargo on it specially after the disclousres on Chernobyl, three mile island and earlier accidents in USSR which have led to widespread cancer as also in Japan; and

(e) whether Government will have a public debate on the question and invite specialists and activists to participate before embarking on this decision from which it is likely to retract after costly experience as in case of several drugs, pesticides etc.?

THE MINISTER OF STATE IN THE MINISTRY OF SCIENCE AND TECHNOLOGY, DEPARTMENT OF ELECTRONICS AND DEPARTMENT OF OCEAN DEVELOPMENT AND MINISTER OF STATE IN THE MINISTRY OF PARLIAMENTARY AFFAIRS (SHRI P. R. KUMARAMANGALAM): (a) Government after careful evaluation of the merits and demerits of food irradiation technology has approved in principle the irradiation process for preservation of food stuffs in 1987. Scientific studies conducted have proved that irradiated food is not harmful for human consumption. So, BARC/DAE is now keen to promote this technology in the country.

(b) Government are aware that some countries including Australia and New Zealand have not so for given clearance for the food preservation by irradiation process.

(c) Government are aware that in some countries like Germany, Australia & Sweden, there is opposition by some consumer forum against introduction and acceptance of irradiated food.

(d) Government are aware of the accidents in the nuclear power plants at three mile island and Chernobyl. However, irradiation of food is not done in a nuclear reactor, but in a food irradiator where either an isotopic source, Cobalt-60, or X-rays or electrons generated from linear accelerator, are used. There is no residual radioactivity left in the food stuffs in these processes causing any damage to the consumers and accidents like those possible in nuclear power reactors are not possible in these irradiators.

(e) There is no need now for the Government to have a public debate on the question of food irradiation, because before clearing irradiation processing, the Government had appointed a Cabinet Committee to study all aspects of food irradiation and the clearance has been given based upon their recommendation.

Strike by operators of Bhabha Atomic Research Centre's High Fluxe Reactor

3072. SHRI S. MADHAVAN: Will the PRIME MINISTER be pleased to state:

(a) whether it is a fact that the operators of the Bhabha Atomic Research Centre's high fluxe reactor, Bombay have struck work protesting against the action taken by the management;

(b) if so, what are the details thereof; and

(c) what steps have been taken by Government to resolve the dispute between the management and the operators?

THE MINISTER OF STATE IN THE MINISTRY OF SCIENCE AND TECHNOLOGY, DEPARTMENT OF ELECTRONICS AND DEPARTMENT OF OCEAN DEVELOPMENT AND MINISTER OF STATE IN THE MINISTRY OF PARLIAMENTARY AFFAIRS (SHRI P. R. KUMARAMANGALAM): (a) and (b) Out of over 13,800 persons working in Bhabha Atomic Research Centre (BARC), a very small number of 136 Tradesmen designated as Plant Operators working in the Research Reactors, Dhruva and Cirus had sought recognition for the so called 'BARC High Flux Reactor Operators Association'. Since there is already a Union in BARC representing Groups C and D staff under the Joint Consultative Machinery Scheme (JCM Scheme), the Operators were informed that it would not be possible to give recognition to another Association representing such a small number. The Operators absented from duty unauthorisedly from 11-6-92 onwards.